REMARKS

Favorable reconsideration is respectfully requested in light of the following remarks. Currently, Claims 1-17 are pending in the present application.

Applicant expresses gratitude for the courtesies extended Applicant's attorney during the recent interview. During the interview, Applicant's attorney discussed the *Hartiala et al.* reference and pointed out certain features that were not found in the claims, even though alleged to be present by the Examiner. After the discussion, the Examiner agreed to further consider our arguments.

Claims 1-3, 6-8 and 14-17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,711,090 to *Hartiala et al.* in view of U.S. Patent Publication No. 20002,0179150 to *Balazy et al.* Claim 4 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Hartiala et al.* in view of *Balazy et al.*, and further in view of U.S. Patent No. 5,121,802 to *Rajala et al.*

The Examiner relies upon *Hartiala et al.* for disclosing the feature that the percussion pressure is adjusted on the basis of the penetration rate. However, *Hartiala et al.* does not support this conclusion. In the text relied upon by the Examiner, *Hartiala et al.* only discusses adjusting pressure medium supplied to a feed motor. Moreover, nowhere else in *Hartiala et al.* is discussed about adjusting the percussion pressure. This is simply because of the fact that *Hartiala et al.* relates to adjusting only feeding, as it is mentioned on column 2, lines 10-12: "The invention is based on the idea that the feed force of the feeder is affected by continuously adjusting the pressure in both pressure ports of the feeder...in this manner the feed force of the feeder can be influenced when the rotary resistance increases...."

As stated in the interview, a person skilled in the art understands that control systems include a sensing step and an adjusting step. The adjustment is done on the basis of the

sensing. In the claimed invention, the pressure of the pressure medium before the restrictor and after the restrictor is sensed in order to determine the penetration rate. Then, a percussion pressure is adjusted on the basis of the penetration rate. In contrast, *Hartiala et al.* discloses sensing the rotation resistance and on the basis of the sensed rotation resistance the pressure of the fluid supplied to the feed motor is adjusted. Accordingly, *Hartiala et al.* fails to disclose these patentable features.

Further, starting on page 2, line 12, and ending on page 3, line 2 of the Office Action, the Examiner refers to column 4, lines 44-49 and states that it is disclosed therein that percussion pressure is adjusted on the basis of the determined penetration rate. This is not true. At column 4, it is discussed on the embodiments shown in Figures 4a and 4b, wherein there is shown continuous thick lines along which pressure medium is led from a pump (9) to three separated circuits- namely to the feed device (1), to the rotary device (5), and to the percussion device (6). The valve (14) is in the return line (7) of the feed device (1) and has no influence on the pressure led to the percussion device (6).

Further, on the same page 2, lines 11 and 12, the Examiner states that *Hartiala et al.* discloses conveying at least one pressure medium flow supplied to or from the feed actuator (1) through at least one restrictor (19). This is not true, since in *Hartiala et al,.* the restrictor (19) is in a pressure line of a rotary motor (5), as it is clearly shown in Figures 2, 5 and 7 . Further, at column 5, lines 15 and 16, it is clearly stated that the throttle (19) is provided in the pipe of the rotary motor. Thus, there is no throttle in *Hartiala et al.* positioned in the pressure line of the feed actuator.

On page 4, second paragraph of the Office Action, the Examiner states that the valve (14) in the pressure line of the feed device (1) is for determining the penetration rate on the basis of the sensed pressures before and after the restrictor (19). However, in *Hartiala et al.*

the penetration rate is not determined but instead the changes in the rotary resistance are determined for the control, see for example column 2, lines 13-15, lines 17-19, and lines 24 and 25, and further column 5, lines 15-30. The changes in the rotary resistance are determined and based on that information the valve (14) is controlled. The valve (14) thus reacts only to the changes in the rotary resistance. Nowhere in *Hartiala et al.* is discussed about penetration rate and nowhere is suggested that the penetration rate is determined by arranging a throttle in the pressure line of the feed device.

Further, on page 4, second paragraph, lines 4 and 5, the Examiner states that the pressure medium arrangement of *Hartiala et al.* is arranged to decrease implicitly the percussion pressure when the penetration rate increases. Firstly, as discussed above, in *Hartiala et al.* the control actions are done on the basis of the determined rotation resistance and the penetration rate is not determined. Secondly, as discussed above, in *Hartiala et al.*, adjusting the percussion pressure does not belong to the disclosed control principles but instead only feed is adjusted on the basis of the determined rotation resistance. Moreover, the determined rotation resistance and the performed adjustment of the feed have no influence to the percussion pressure.

The Examiner states that *Hartiala et al.* implicitly shows the method of controlling percussion pressure. However, *Hartiala et al.* does not disclose any means for adjusting percussion pressure. At column 3, lines 59-63 of *Hartiala et al.*, it is said that the percussion element (6) is connected to the pump (9) by means of a flow direction control valve (28), and further, that the maximum pressure in the circuit is limited by means of a valve (25). The valve (25) affects on the whole hydraulic system. Thus, in *Hartiala et al.* there is no means what so ever to control the percussion pressure. Accordingly, *Hartiala et al.* does not disclose many of the features of independent Claim 1, as discussed above.

With regard to independent Claim 17, the Examiner states that in *Hartiala et al.* "at least one restrictor (19) is connected to at least one feed channel (13) of the feed actuator (1)." This is not true. As it is already discussed, *Hartiala et al.* teaches to arrange the restrictor (19) in the pressure line of the rotary motor (5). Therefore, there cannot be disclosure in *Hartiala et al.* of arranging the restrictor (19) in a feed channel of the feed actuator along which the pressure medium returns from the feed actuator, as it is defined independent claim 17.

Balazy et al. does not make up for the foregoing deficiencies of *Hartiala et al. Balazy et al.* pertains to providing an accurate desired flow rate of process fluids, particularly gases, paragraphs [0003, 0004 and 0008]. On page 10, lines 1-3 of the Office Action, the Examiner admits that the teaching of *Balazy et al.* relates to employing restrictor and sensor to control the fluid flow. It is true that *Balazy et al.* relates to a flow control system. However, in *Balazy et al.*, the aim is to have an accurate desired flow rate of process fluids, see paragraphs [0003], [0004] and [0008]. Contrary to the teaching of *Balazy et al.*, *Hartiala et al.* teaches to allow the pressure and flow differences across the restrictor because of the varying rotation resistance and it further teaches to utilize this allowed variation in flow for the control of the feeding direction.

The purpose in *Hartiala et al.* is not to achieve a predetermined accurate fluid flow over the restrictor, which is arranged in the pressure line of the rotation motor (6). Therefore, it would be illogical to combine the teachings of *Hartiala et al.* and *Balazy et al.*. If for some reason the pressure flow in *Hartiala et al.* would be adjusted to be constant as taught in *Balazy et al.*, that would of course take away the functionality of the control system of *Hartiala et al.*. Accordingly, *Hartiala et al.* is not properly combinable with *Balazy et al.*.

Further, the combination would still not determine the penetration rate and it would not affect in any way of controlling the impact pressure on the basis of the penetration rate. Accordingly, neither *Hartiala et al. et al.* nor *Balazy et al.*, in combination or alone, disclose the patentable features of independent Claims 1, 6, 14 and 17.

For at least the foregoing reasons, it is submitted that the method and apparatus of independent Claims 1, 5, 6, 14 and 17, and the claims depending therefrom, are patentably distinguishable over the applied documents. Accordingly, withdrawal of the rejections of record and allowance of this application are earnestly solicited.

Should any questions arise in connection with this application, or should the Examiner believe a telephone conference would be helpful in resolving any remaining issues pertaining to this application, it is respectfully requested that the undersigned be contacted at the number indicated below.

EXCEPT for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 50-0573. This paragraph is intended to be a CONSTRUCTIVE PETITION FOR EXTENSION OF TIME in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully Submitted,

Date: December 23, 2008 By: Elaine P. Spector

DRINKER BIDDLE & REATH LLP
Customer No. 55694
1500 K Street, N.W., Suite 1100
Washington, D.C. 20005-1209
Tel. No.: 202-842-8800
EPS:mk

Elaine P. Spector
Reg. No. 40,116
Attorney for Applicants
Tel. No.: (202) 842-8863
Fax No.: (202) 842-8465